DOCUMENT RESUME

ED 294 858 SP 030 222

AUTHOR McConnell, David M.; LeCapitaine, John E.
TITLE The Effects of Group Creativity Training on Teachers' Empathy and Interactions with Students.
PUB DATE [85]
NOTE 22p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Empathy; *Interaction Process Analysis; Interpersonal Competence; Program Effectiveness; Secondary Education; *Student Motivation; *Teacher Behavior; *Teacher Student Relationship
IDENTIFIERS California Psychological Inventory; Teacher Behavior Description Questionnaire

ABSTRACT

This study examined the effects of group creativity training upon teachers' empathy and interactions with students as perceived by students and teachers. A group of 26 secondary teachers were divided into an experimental and a control group and were administered the McConnell revised Teacher Behavior Description Questionnaire (TBDQ) and the California Psychological Inventory Empathy Scale (CPI) prior to and following treatment. The treatment consisted of 40 hours of creativity training conducted at Synectics, Inc., of Cambridge, Massachusetts. This training emphasized experimentalism, idea development, positive interaction and empathic responses. It was concluded that the experimental group manifested statistically significant increases in empathy in comparison to the control group. There were no statistically significant differences between the groups with respect to the four subscales of the TBDQ. However, the control group did manifest statistically significant increases on the TBDQ Teacher Actual Behavior and Student-rated Actual Behavior subscales. Following the training, teachers reported that they were more open with student ideas and responses, reinforced students, allowed experimentation, and listened more intently to student input. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED294858

THE EFFECTS OF GROUP CREATIVITY TRAINING ON TEACHERS' EMPATHY AND INTERACTIONS WITH STUDENTS

David M. McConnell
Harwinton, CT

John E. LeCapitaine
Boston, MA

Running head: Creativity Training

SP030222

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

D. M. McConnell

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Abstract

The major focus of the study was on examining the effects of group creativity training upon teachers' empathy and teachers' interactions with students as perceived by students and teachers. The research design included a group of 26 teachers randomly divided into one experimental group consisting of 10 subjects and one control group consisting of 16 subjects. The sample included 22 high school teachers and 4 middle school teachers. Both groups were administered the McConnell revised Teacher Behavior Description Questionnaire (TBDQ) and the California Psychological Inventory Empathy Scale (CPI) six weeks prior to the treatment and in the four weeks following treatment. In addition, students enrolled in the experimental and control groups' classes were also pretested and posttested using the TBDQ and provided 338 individual student TBDQ responses. Qualitative data were obtained and analyzed using an individual and group questionnaire. The treatment consisted of 40 hours of creativity training conducted at Synectics, Inc., of Cambridge, MA. The training emphasized experimentalism, idea development, positive interaction and empathic responses. It was concluded that the experimental group manifested statistically significant increases in empathy in comparison to the control group. There were no statistically

significant differences between groups with respect to the four subscales of the TBDQ. However, the control group did manifest statistically significant increases on the TBDQ Teacher Actual Behavior and Student-rated Actual Behavior subscales. These control group increases may have been due to control group contamination and the factors of age and experience. As evidenced by the qualitative findings, the synectics training appeared to have had an impact upon the teachers within the experimental group with respect to teacher empathy and specific teaching behaviors. Following the training, teachers reported that they were more open with student ideas and responses, reinforced students, allowed experimentation, and listened more intently to student input.

The Effects of Group Creativity Training on Teachers' Empathy and Interactions with Students

The typical clinical approach to teacher supervision emphasizes a preconference, a class visit, and a post conference with the teacher to discuss objectives, the class visit, and methods to improve instruction for students. This process of clinical supervision as a model plan of teacher supervision is advocated by several educators, including Madeline Hunter (1982), who has recently received national recognition for this technique of instructional improvement. However, though many teachers know content and are proficient in their subject area, they do not have good rapport with students. Rapport with students is reflected in the detailed interactions teachers have minute by minute in the classroom. Overall success with students in the classroom may depend largely on the perception students have of the teacher's skill in listening openly, making the student feel comfortable or uncomfortable in the environment of the classroom, encouraging risk and experimentation, evaluating with an open mind and so forth. These elements of student-teacher interactions can make the climate of the classroom positive or negative. Clinical supervision models which fail to emphasize these skills are not adequate for instructional growth. Such

models could be improved by the use of an auxiliary model which focuses on interaction and creativity. Such a model is the Synectics Innovative Teamwork Program (ITP) designed by Synectics, Inc., of Cambridge, Massachusetts in 1979. ITP promotes staff development in the much needed area of teacher-student interactions, applying the use of synectics. Synectics is a group problem solving method which provides an avenue for innovative thinking and the production of new ideas (Prince, 1970). The program emphasizes group helping, understanding of others' thoughts, acknowledging and building upon others' suggestions, involving innovative teamwork, providing openmindedness and team problem solving, building self-esteem while providing a cooperative accomplishment atmosphere for the management of interactions of people's ideas on topics important to organizations. Synectics actively involves a "group of people of varied backgrounds that meets to attempt creative solutions through the unrestricted exercise of imagination and the correlation of disparate elements" (Gray, 1981, p. 3).

The major purpose of this study was to examine the effects of Synectics group creativity training upon teachers' empathy and teachers' interactions with students as perceived by students and teachers. The underlying assumption is that certain teacher behaviors can motivate learning and others can

inhibit learning. Silberman and Silberman (1970) indicate that a student's "delight in learning can be 'destroyed' through his interaction with teachers who are unaware of their interaction behaviors" (Gazda, Asbury, Balzer, Childers, Deselle & Waters, 1973, p. 4). Of particular interest is a range of behaviors that is displayed through verbal, vocal and non-verbal interactions with students. It is assumed that these behaviors can be observed, understood and changed. In short, they are amenable to training.

A number of studies have shown that a teacher's degree of interpersonal warmth and empathic ability can be factors in his or her effectiveness.

> Christensen (1960) found a significant positive relationship between the degree of teacher warmth and student achievement levels on measures of vocabulary and mathematics. Students of teachers communicating high levels of warmth scored higher than students of teachers communicating low levels. (Gazda et al., 1973, p. 13)

Reed (1962) found teachers who offered a high degree of warmth favorably affected thier students' interest in science, and Cogan (1958) found that teachers offering a high degree of warmth produced an exceptional quantity of art and creative poetry (Gazda et al., 1973, pp. 13-14).

Perhaps not every teacher can "learn" to have a "warm" personality, but the premise of this study was that all

teachers can learn to display behaviors that encourage risk taking, experimenting and creative thinking on the part of their students; and in doing so, become more empathic.

Method

Subjects and Design

The sample consisted of 26 teachers (22 high school teachers and 4 middle school teachers) randomly selected from a population of 99. The school district where the teachers are employed is located in the northwestern section of Connecticut. The schools service middle to upper class Caucasian students. The sample included 12 males and 14 females. Of these teachers, 13 had obtained Masters degrees, 9 had completed their sixth year in graduate study, and 4 had Bachelor degrees. The average teacher age was 42.39 years and the average number of years teaching was 15.96.

The subjects were randomly divided into two groups, one experimental group consisting of 10 teachers, and one control group consisting of 16 teachers. Both groups were administered the California Psychological Inventory Empathy Scale (Gough, 1975) and the McConnell (1987) revised Teacher Behavior Description Questionnaire (Moody and Amos, 1982) six weeks prior to treatment and four weeks following treatment. In addition, 326 students enrolled in the experimental and

control groups' classes were also pretested and posttested using the McConnell (1987) revised Teacher Behavior Description Questionnaire.

Instrumentation

The California Psychological Inventory (CPI). According to National Computer Systems, the CPI, a popular and widely used measure developed by Gough (1975), is:

> An easily used and understood personality assessment based "on folk concepts"-aspects and attributes of interpersonal behavior and social interaction found in most cultures and societies. The CPI was developed to address personality characteristics important for social living and social interaction, and maintains wide applicability in many cultures and circumstances. With scales easily used and understood by the professional, the CPI has become a convenient and direct way for psychologists, counselors, educators and employers to help forecast how individuals of high school age or older will behave in social interactions. The CPI assists the work of industrial and personnel professionals by enabling them to evaluate how interpersonal skills and social functioning are likely to affect job performance.

Gough and others have completed a plethora of construct validation studies pertaining to the 18 subscales of the CPI. The evidence seems to indicate that the scales measure the particular constructs inherent in their titles (Baucum, 1985). For the purposes of this study, the CPI Empathy Scale was utilized. It was developed to assess the capacity to think intuitively about people and to understand their feelings and

attitudes. The scale contains 39 items. High scorers are often described as friendly, versatile, and outgoing. Low-scorers are often described as withdrawn, shy, and hard to please.

Teacher Behavior Description Questionnaire (TBDQ). The TBDQ, adapted from Moody and Amos (1982), was revised and expanded by McConnell (1987) after reviewing the literature of Lewin and Long (1981), Borich and Fenton (1977), Joyce, Brown, and Peck (1981), Brophy and Good (1974), Good, Biddle, and Brophy (1975), Friedman, Brinlee, and Hayes (1980), Joyce and Weil (1972), Joyce and Herootunian (1967), Csikszentimihalyi and McCormack (1986), Berliner (1984), Joyce and Showers (1980), Gage (1984), Sadker and Sadker (1985), Mosley and Smith (1982), and James (1983). The questionnaire was designed to measure (1) teacher perception of the desirability of certain behaviors for effective performance; and (2) teacher perception of the extent to which the behaviors are being practiced by themselves. Students involved in the evaluation phase rated teachers in the following ways: (a) student perception of the desirability of certain teacher behaviors for effective performance and, (b) student perceptions of the extent to which the teacher behaviors were being practiced by their teacher.

The TBDQ consists of 85 items relating to specific teacher behavior centering on the six factors of responsibility, imagination, friendliness, preparedness, integratedness, and the ability to challenge. There are two response sets, a "teacher desirable behavior" (TDB) and a "teacher actual behavior" (TAB) five point scale with "1" corresponding to very rarely and "5" referring to very frequently.

A pilot test of the TBDQ using 97 teachers from southern Maine determined impressive internal reliability and construct validity. Hoyt coefficients of .99 for the TDB and .98 for the TAB were attained. Furthermore, internal reliability analyses for this study yielded Hoyt coefficients of .98 for the TDB and TAB (student responses and .97 for the TDB and TAB (teacher responses). Factor analysis indicated that the TBDQ does, in fact, measure the two essential study constructs, humanism and experimentalism.

Treatment Procedure

The treatment consisted of 40 hours of creativity training conducted at Synectics, Inc., Cambridge, MA. The training emphasized experimentalism, idea development, positive interaction, and empathic responses within a highly supportive atmosphere. More specifically, Synectics training as described by Gray (1981) and Prince (1970) is as follows:

> The two major components of a synectics meeting are its members and a problem solving-format.

> The roles in a synectics meeting are client, participant, and leader. The purpose of the client role in a synectics meeting is to provide a background of the problem area, demonstrate ownership of the problem, and to resolve ideas offered by other members of the synectic group. Participants of a synectics group constitute the second role. Participants are charged with the responsibility of providing ideas from which a client selects to arrive at a possible solution. The third role is that of leader. The primary purpose of the leader role is to assist the client in achieving a possible solution by utilizing the problem solving process. (p. 83)

The three major stages involved in the problem solving process are (1) Problem Development which includes exercises in divergent and convergent thinking, (2) Solution Development which includes decision-making and problem solving, and (3) Research Development which emphasizes personal resolving.

Results and Discussion

A series of one-way ANOVA's with repeated measures were conducted to determine the pretest to posttest differences between the experimental group and the control group with respect to the CPI Empathy Scale, TBDQ Teacher Desired Behavior Scores, TBDQ Teacher Actual Behavior Scores, TBDQ Student Desired Behavior Scores, and TBDQ Student Actual Behavior Scores. A series of t-test analyses were conducted to determine statistically significant pretest to posttest mean differences within the experimental and control groups.

In addition, a series of Step-wise Regression Analyses were done to determine if the selected independent variables of age, experience, degree, gender, and empathy were statistically significant predictors of the four TBDQ subscales. Finally, the same statistical analyses were applied using a shortened version of the TBDQ, consisting of 20 items determined to be highly synectics-related through factor analysis with respect to the aforementioned factors of humanism and experimentalism. The results of the analyses comprise the following seven findings.

1. There was a statistically significant difference between the experimental group (+1.5) and the control group (-1.6) from pretest to posttest with respect to empathy change scores [$F(1,24)=8.57, p<.01$]. There were no statistically significant differences between the two groups' change scores with respect to the four TBDQ subscales.

2. The control group manifested a statistically significant positive pretest to posttest change on the TAB and the Student-rated Actual Behavior (SAB) subscales of the TBDQ, long version ($t_{TAB}=3.1, p<.008$; $t_{SAB}=2.1, p,.05$) and short version ($t_{TAB}=2.7, p<.02$; $t_{SAB}=2.3, p<.05$).

3. The experimental group manifested a statistically significant ($t=3.9, p<.005$) positive pretest to posttest change (10.2) on the shortened version of the TDB subscale of the TBDQ.

4. The three demographic variables of experience, age, and degree accounted for the most variance with respect to the four TBDQ subscales and the empathy measure. These variables in combination were statistically significant predictors of empathy scores [$F(4,25)=3.98, p<.01$] and SDB scores [$F(4,25)=4.35, p<.01$]. In addition, the variable of age, in isolation, was a statistically significant predictor of empathy scores [$F(1,24)=6.43, p<.02$], SDB scores [$F(1,24)=11.1, p<.003$], and SAB scores [$F(1,24)=5.6, p<.03$]. The variable of degree, in isolation, was a statistically significant predictor of empathy scores [$F(2.24)=4.41, p<.03$].

5. Step-wise Regression Analyses were conducted to determine if the four independent variables of training, experience, age and empathy were statistically significant predictors of TAB, TDB, SAB, SDB pretest to posttest change scores. Training was a statistically significant [$F(1,24)=5.18, p<.05$] predictor of empathy change scores. Twenty-six percent of the variance in empathy scores was attributed to training. Those teachers in the experimental group tended to manifest higher positive empathy change scores while those teachers in the control group tended to manifest higher negative change scores. Both age and experience were statistically significant predictors of SAB change scores. Those teachers who tended to be older had accompanying high positive

SAB change scores; while those teachers who tended to be younger had accompanying high negative SAB change scores. In addition, those teachers who had less teaching experience tended to have accompanying high positive SAB change scores; while those who had more teaching experience tended to have accompanying high negative change scores.

6. Step-wise Regression Analyses of the shortened version of the TBDQ showed that the independent variable of experience was a statistically significant predictor of both SDB pretest to posttest change scores [$F(1,24)=8.31, p<.01$], and SAB change scores [$F(1,24)=9.36, p<.01$]. Those teachers with more teaching experience tended to have lower change scores on the SDB and SAB scales. Age was also a statistically significant predictor of TDB pretest to posttest change scores [$F(1,24)=6.46, p<.025$]. Those teachers who were older tended to demonstrate high positive change scores.

7. Qualitative data were obtained and analyzed using an individual and group teacher questionnaire, both consisting of four training related items. The responses from the group questionnaire were similar to and highly supported those of the individual questionnaire. With respect to the individual questionnaire, consisting of the four questions related to changes in teaching behaviors that may have occured as a result of the synectics training, 54 percent of the teacher

responses to question number one dealing with those changes were included in the category of "being more receptive to input from students". Seventy-five percent of the teacher responses to question number two dealing with changes that didn't occur were included in the category of "still being traditional and routine in classroom approach". Forty-three percent of the teacher responses to question number three which referred to barriers in sustaining changes that occurred in teaching since going to Synectics, centered on negative comments from other teachers who didn't get the training, large class size and classroom structure. Fifty-two percent of the teacher responses to question number four dealing with the ingredients in Synectics that influenced change were included in the category reflecting that Synectics focuses on accepting everyone on an equal basis, allowing everyone to contribute, to experiment, to be creative and to explore new concepts and ideas.

With regard to the quantitative findings, the Synectics training had an interactive effect with respect to empathy scores. The experimental group scored significantly higher in comparison to the control group from pretest to posttest time. Although there was no statistically significant increase from pretest to posttest within the experimental group, it did increase 1.5 points with scores ranging from 16 to 32.

The program did not appear to have an effect upon the experimental group teachers with regard to Teacher Actual Behavior, nor upon the students' rating of teachers in the areas of Desired Behavior and Actual Behavior. However, the experimental teacher group did significantly increase its ratings of Teacher Desired Behaviors on the shortened version of the questionnaire. For reasons speculated to be related to control group contamination and the Hawthorne effect, the control group did manifest statistically significant increased scores on the measures of Teacher Actual Behavior and Student-rated Actual Behavior. These results were somewhat unexpected and surprising. These findings may have been the result of control group contamination and the impact of the factors of age and experience. The control group contamination was evidenced by the reported accounts of control teachers having access to Synectics training information and verbal interchanges with the experimental group. The regression analyses previously discussed indicated the significant effect of age and experience upon the TBDQ scores. Since the control group was older and more experienced, their significant increases on the TAB and SAB scales may have been due to those two factors.

With respect to the qualitative findings, the Synectics training appeared to have had an impact upon the teachers within the experimental group with regard to teacher empathy

and specific teaching behaviors as perceived by the teachers. Following the training, teachers reported that they were more open with student ideas and responses, and listened more intently to student input. They reinforced students to a greater degree and allowed more experimentation.

The impact of the training upon the teachers may have been fostered by the theoretical ingredients inherent in the Synectics program as outlined by Prince (1970); and the empirical ingredients as evidenced in the training sessions themselves. The theoretical ingredients focused upon a supportive culture which encouraged attentiveness, listening, acknowledgment, crediting; and emphasized the value of student ideas in a positive classroom setting. The empirical ingredients consistent with the theoretical ingredients, yielded from the questionnaires and videotaped sessions consisted of provocative teacher statements reflecting experimentalism, empathy, and polsitive interaction within a relaxed, caring, creative atmosphere. All of these ingredients are essential components to humanistic education and to humanism, in general. Synectics training appears to promote that humanism.

References

Baucum, Donald H. (1985). A review of the California psychological inventory. In James V. Mitchell (Ed.), Ninth mental measurement yearbook. Lincoln, NE: The University of Nebraska Press.

Berliner, David C. (1984). The half-full glass: a review of research on teaching. Using what we know about teaching. Alexandria, VA: Association for Supervision and Curriculum Development. pp. 51-77.

Borich, Gary D., & Fenton, Kathleen S. (1977). The appraisal of teaching: concepts and process. Reading, MA: Addison Wesley Publishing Co.

Brophy, Jere E., & Good, Thomas L. (1974). Teacher-student relationships - causes and consequences. New York: Holt, Rinehart, Winston, Inc.

Christensen, C. M. (1960). Relationship between pupil achievement, pupil affect-need, teacher warmth and teacher permissiveness. Journal of Educational Psychology, 51, 169-174.

Cogan, M. L. (1958, December). The behavior of teachers and the productive behavior of their pupils. Journal of Experimental Education, pp. 89-124.

Csikszentimihalyi, Milaly, & McCormack, Jane. (1986, February). The influence of teachers. Phi Delta Kappan, 67(6), 415-419.

Friedman, Myles I., Brinlee, Patricia S. & Hayes, Patricia B. (1980). Improving teacher education: resources and recommendations. New York, London: Longman.

Gage, N. L. (1984, October). What we know about teaching effectiveness? Phi Delta Kappan, 66(2), 87-93.

Gazda, G. M., Asbury, F. R., Balzer, F. J., Childers, W. C., Desselle, R. E., & Walters, R. P. (1973). Human relations development - a manual for educators. Boston: Allyn & Bacon.

Good, Thomas L., Biddle, Bruce J., & Brophy, Jere E. (1975). Teachers make a difference. New York: Holt, Rinehart, Winston, Inc.

Gough, H. G. (1975). California psychological inventory. Minneapolis, MN: National Computer Systems Professional Assessment Services.

Gray, B. L. (1981). Synectics: a solution-centered approach to small group discussion (Doctoral dissertation, Ohio University, 1981). University Microfilms International, 8206560.

Hunter, Madeline (1982). Mastery Teaching. El Segunda, CA: TIP Publications.

James, Thomas. (1983, January). [Interview with David Hawkins, Teachers of Teachers, Companion of Children]. Phi Delta Kappan, 64(5), 362-365.

Joyce, Bruce R., Brown, Clark C., & Peck, Lucy. (1981). Flexibility in teaching - an excursion into the nature of teaching and training. New York, London: Longman.

Joyce, Bruce R., & Harootonian, Berj. (1967). The structure of teaching. Chicago: Science Research Associates, Inc.

Joyce, Bruce R., & Showers, Beverly. (1980, February). Improving inservice training - the messages of research. Educational Leadership Journal of the Association for Supervision and Curriculum Development, 37(5), 379-385.

Joyce, Bruce R., & Weil, Marsha. (1972). Models of teaching. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

Lewin, Tamar, & Long, Ruth. (1981). Effective Instruction. The Association for Supervision and Curriculum Development. Alexandria, VA: 225 North Washington Street.

McConnell, David M., (1987). The effects of group creativity training on teachers' empathy and interactions with students (Doctoral dissertation, Boston University). University Microfilm International,

Moody, L. & Amos, N. G. (1982). A comparison between teachers perceptions of desirable teacher behavior in public schools. Mississippi State University, Mississippi State Bureau of Educational Research. 1-22.

Mosley, Mary H., & Smith, Paul J. (1982, December). What works in learning? Students provide the answers. Phi Delta Kappan, 64(4), 273-275.

Prince, George M. (1970). The practice of creativity: a manual for dynamic group problem solving. New York: Macmillan Publishing Co., Inc.

Sadker, David, & Sadker, Myra. (1985), January). Is the o.k. classroom o.k.? Phi Delta Kappan, 66(5), pp. 358-361.

Synectics, Inc. (1979). Innovative Teamwork Program Readings. Cambridge, MA: Author.